



RELAY PROTECTION

Consulting & Power System Analysis

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Power System Protection Consulting

Focus:

Fault Analysis,
Relay Settings &
System Reliability

Key Objectives:

This project demonstrates my ability to analyze power systems, evaluate protection schemes, and configure relay protection settings to ensure reliable fault detection and system stability.

Project Objective

The objective of this project was to assess and improve a protection system by combining system analysis, fault evaluation, and relay configuration.



Key goals:

- Analyze power system behavior
- Evaluate protection schemes
- Detect and assess fault conditions
- Configure and optimize relay settings

Protection Analysis



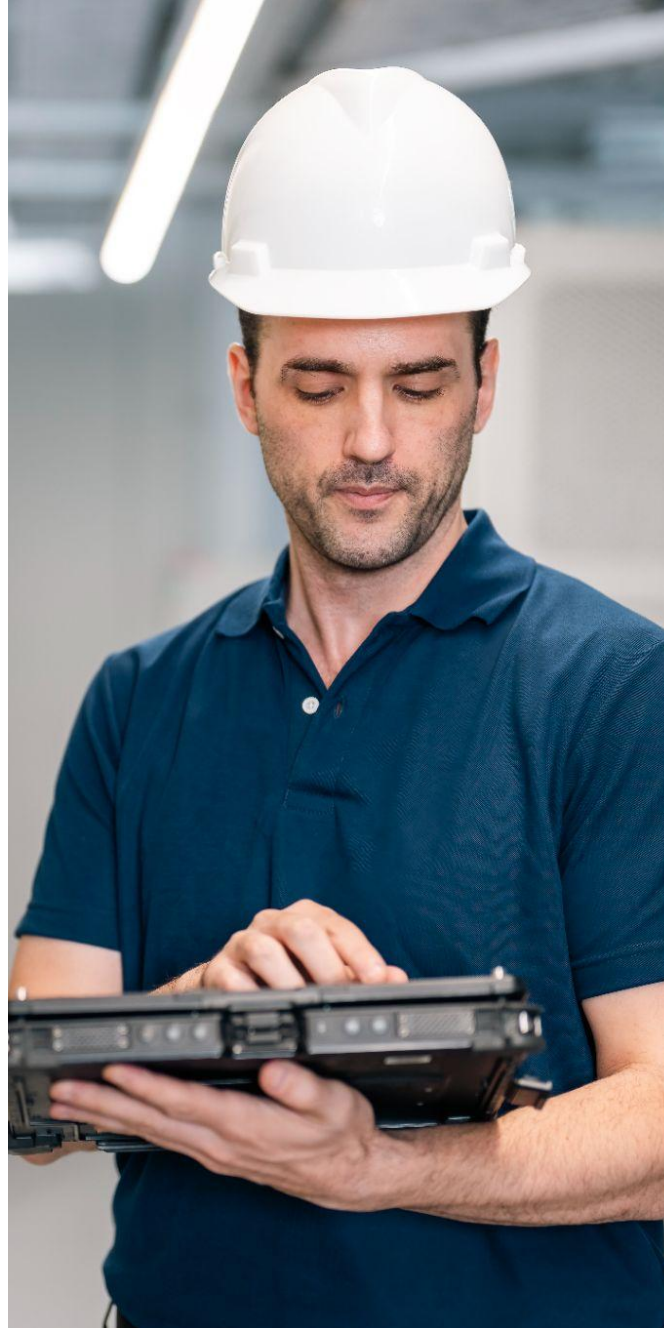
Protection functions evaluated:

- Overcurrent protection
- Differential protection
- Distance protection
- Line differential protection
- Busbar protection
- Generator protection

Focus:

- Selectivity
- Sensitivity
- Coordination between relays

Relay Settings & Configuration



Activities performed:

Calculation of relay settings
(pickup, time delays)

Configuration of
protection functions

Adjustment of
coordination margins

Protection Analysis



Protection functions evaluated:

- Preparing relay configuration files
- Parameter setting in relay software
- Managing relay setting files and backups
- Supporting relay commissioning and updates

Tools:

- GE / Siemens / ABB/ Schneider Electric
- Engineering configuration tools

Testing & Verification

Testing activities:



**Secondary
injection testing**

**Functional verification
of protection logic**

**Trip signal
verification**

Goal:

Ensure correct relay operation before commissioning



Consulting Value

This work supports:

Safer power
system operation

Reduced fault impact
and downtime

Compliance with
protection standards

Reliable and optimized
protection performance



Results

01

Reliable fault
detection
and isolation

02

Proper
coordination
between
protection
devices

03

Optimized
relay
settings

04

Improved
system stability
and safety